Uranium mining should have stricter rules

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An article in the Victoria Advocate on Oct. 16 indicated that Uranium Energy Corporation (UEC) is on the verge of receiving the permits required to proceed with uranium mining in Goliad County.

Typically, in Uranium in-situ mining, several injection wells are drilled to inject fluids that will dissolve the uranium in the sands. The dissolved uranium is then recovered in a production well and processed to recover the uranium.

I feel that the uranium mining operations will contaminate our aquifers.

There are many similarities between uranium mining and oilfield operations. The wells are cased and cemented using oilfield drilling techniques. The wells are put into production using gravel packs, an oilfield completion technique. The wells are produced using oilfield water flooding techniques. Finally, if the injection wells plug up, the wells are acidized using oilfield remedial techniques. In my opinion, this qualifies as a drilling, completion and producing operation, not a mining operation, as it has been craftily categorized.

There are some differences. Oil and gas operations occur at thousands of feet, whereas the uranium operations occur at hundreds of feet, and in the case of Goliad County, at about 100 feet. In the case of oil and gas operations, the potable water aquifers would have been isolated with casing and cement. However, in the uranium mining operations the operation occurs directly in the Goliad County potable water aquifers.

The oil and gas regulatory agency, the Texas Railroad Commission (TRRC), would not have allowed this type of operations in potable water aquifers. They have strict rules about how potable aquifers should be protected. This includes all potentially usable aquifers. This ban is based on their extensive experience concerning pollution of potable water aquifers by oil and gas operations. Before the TRRC began regulating oil and gas operations, there were numerous instances of these operations contaminating aquifers.

However, in uranium mining, the Texas Commission for Environmental Quality (TCEQ) grants the permits and the Environmental Protection Agency grants an aquifer exemption based on paperwork submitted by the mining company showing that the aquifer is not continuous and that the operations will not contaminate neighboring water wells. The mining company is then free to inject and release contaminants into a potable water aquifer. Our aquifers are not confined. They are continuous over Goliad County and surrounding areas and eventually migrate to the Gulf of Mexico.

There are things that can be done to get assurance that our aquifers will not be contaminated. Any prudent operator would not hesitate to do the due diligence required to better assure the people of Goliad County that our aquifers will not be contaminated. These include:

1. Obtain high resolution 3-D seismic to identify impermeable barriers and faults to be able to better model the injection and water flooding processes. This would ensure that the models are correct and that all products and byproducts of the operations stay within the operating area.

2. Perform injection tests to ensure the injection fluid will not fracture the formations and the contaminants generated will not migrate beyond the bounds of the area they intend to operate. In conjunction with the above, this would also ensure that the injected fluids follow a direct path to the production well rather than a course of least resistance away from the production well. More importantly, these tests would show that the geological faults are actually barriers to migration beyond the operating area.

3. Perform extensive pump tests to ensure existing drinking water wells will not be affected. This would ensure that neighboring water wells will not be affected.

It is my opinion that these tests will show that the projected path of the injected fluids cannot be controlled and that eventually the aquifers will be contaminated. This also explains why, at the end of these mining operations, no mining operators have been able to return the aquifer to their original in-situ state.

It may be argued that obtaining this additional assurance would make the mining costs prohibitive, but I would argue that if costs override the safety concerns, then the operation should not be allowed to proceed.

If the mining operation is allowed, additional monitoring wells are needed to ensure the fluids do not take unexpected paths. An extensive and a detailed contingency plan is also needed to mitigate any excursions that might occur, although, if an excursion is detected, it is already too late to contain the contaminants.

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